

# इंटरनेट

# मानक

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“जानने का अधिकार, जीने का अधिकार”

Mazdoor Kisan Shakti Sangathan

“The Right to Information, The Right to Live”

“पुराने को छोड़ नये के तरफ”

Jawaharlal Nehru

“Step Out From the Old to the New”

IS 8581 (1977): Supplier's data sheet for cooling towers for process industry [MED 17: Chemical Engineering Plants and Related Equipment]



“ज्ञान से एक नये भारत का निर्माण”

Satyanarayan Gangaram Pitroda

“Invent a New India Using Knowledge”



“ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है”

Bhartrhari—Nitiśatakam

“Knowledge is such a treasure which cannot be stolen”



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Indian Standard

SUPPLIER'S DATA SHEET FOR  
COOLING TOWERS FOR PROCESS INDUSTRY

1. **Scope** — Covers the technical data to be supplied by a manufacturer or a supplier of a cooling tower to a purchaser.
2. **Supplier's Data Sheet**

SUPPLIER'S DATA SHEET FOR COOLING TOWERS FOR PROCESS INDUSTRY

Tower

- 1) Type of cooling tower.....
- 2) Maker.....
- 3) Model.....
- 4) Number of cells.....
- 5) Dimensions of each cell.....m
- 6) Fans per cell.....
- 7) Arrangement of cells.....
- 8) Fan stack height.....m
- 9) Height of air inlet.....m
- 10) Overall height (basin curb to top deck).....m
- 11) Overall dimensions of the unit and the space required by the cooling tower as well as its auxiliaries like pumps.....
- 12) Approximate basin dimensions.....
- 13) Packing:
- a) Type (film/splash).....
- b) Height.....m
- c) Size.....m
- d) Spacing:
- i) Horizontal.....
- ii) Vertical.....
- e) Number of rows.....

Gear

- 14) Type of gear.....
- a) Model.....                      b) Number.....
- 15) Reduction ratio.....
- 16) Service factor at rated brake power.....
- 17) Number of reductions.....
- 18) Type of enclosure.....
- 19) Efficiency.....

Drive Shafts

- 20) Type.....
- 21) Material of construction.....
- 22) Rated capacity.....kW
- 23) Type and material of coupling.....
- 24) Type of balancing:
- a) Dynamic balancing (Yes/No).....
- b) Static balancing (Yes/No).....

(Continued)

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Chemical Engineering Sectional Committee, EDC 57; Basic Chemical Engineering Standards Subcommittee, EDC 57 : 1 [Ref: Doc: EDC 57 (2722)]

**SUPPLIER'S DATA SHEET FOR COOLING TOWERS FOR PROCESS INDUSTRY — Contd****Motors**

- 25) Type.....
- 26) Number of motors.....
- 27) Power output.....kW
- 28) Efficiency.....
- 29) Speed.....rev/min
- 30) Power requirements:
- a) Volts..... b) Phase.....
- c) Hertz..... d) Direct current.....volts

**Fans**

- 31) Blade:
- a) Material..... b) Number of blades per fan.....
- c) Blade pitch (fixed/adjustable).....
- 32) Number of fans.....
- 33) Diameter.....mm
- 34) Material of fan hub and cover.....
- 35) Fan power at motor.....kW
- 36) Speed:
- a) Fan.....rev/min
- b) Fan tip.....m/min
- 37) Air discharge per fan.....m<sup>3</sup>/h
- 38) Total static pressure.....Pa
- 39) Velocity pressure.....Pa
- 40) Fan static efficiency.....
- 41) Static balancing (Yes/No).....

**Design and Performance Data**

- 42) Water data at design and performance conditions:
- a) Total flow rate.....m<sup>3</sup>/h
- b) Flow per cell.....m<sup>3</sup>/h
- c) Mass flow rate.....kg/m<sup>2</sup>/h
- d) Inlet temperature.....°C
- e) Outlet temperature.....°C
- f) Ratio of water to air or relative humidity.....
- g) Evaporation loss.....m<sup>3</sup>/h
- h) Drift loss.....m<sup>3</sup>/h
- 43) Water concentration through filling.....
- 44) Design inlet wet bulb temperature.....°C
- 45) Design approach temperature difference.....°C
- 46) Design wind load.....kPa
- 47) Details including materials of construction, of drift eliminators.....
- 48) Details of fill.....
- 49) Dry air flow.....kg/m<sup>2</sup>/h
- 50) Details of air louvers.....
- 51) Distribution system:
- a) Type.....
- b) Material of construction.....

(Continued)

**SUPPLIER'S DATA SHEET FOR COOLING TOWERS FOR PROCESS INDUSTRY — Contd**

- c) Header.....
- d) Lateral.....
- e) Nozzles.....
- f) Static pump head (above basin curb).....
- g) Distance from basin curb to the centreline of header.....

**52) Variation with respect to design value:**

- a) Cooling water flow.....m<sup>3</sup>/h
- b) Cooling range.....°C
- c) Wet bulb temperature.....°C

**Note** — Performance curves for water loads at 90 percent, 100 percent and 110 percent of the design water loads as well as for range of cooling at design and 20 percent above and below, against cold water temperature and wet bulb temperature should be given.

**53) Basin:**

- a) Capacity.....m<sup>3</sup>
- b) Furnished by.....
- c) Materials.....
- d) Anchor bolts by.....
- e) Internal post length below curb.....m

**54) Isolation facility for individual cell-basin provided (Yes/No).....****55) Slip stream filter provided (Yes/No), details if provided.....****56) Material of construction and surface treatment:**

- a) Fasteners and structural connectors.....
- b) Frame.....
- c) Casing.....
- d) Filling.....
- e) Fill support.....
- f) Fan deck and stack.....
- g) Louvers.....
- h) Partition walls.....
- j) Tower sheathing.....
- k) Structurals.....
- n) Stair case and hand rails.....
- p) Anchor.....

**57) Access to top of tower (Yes/No).....****58) Type of fan stack.....****59) Approximate shipping weight.....tonne****60) Approximate operating weight.....tonne****Remarks****61) Special features if any.....****EXPLANATORY NOTE**

The information given by a manufacturer or a supplier according to the above data sheet, will enable a purchaser to evaluate the product before he finally decides to purchase a particular brand or type.

International system (SI) of units has been used in the standard. The relationship of these units to other units are given below for guidance:

$$1 \text{ pascal (Pa)} = 1 \text{ newton/square metre (N/m}^2\text{)} \\ = 0.102 \text{ kgf/m}^2$$